

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A cold die steel excellent in characteristics of suppressing dimensional change, consisting essentially of~~including~~, by mass%,

carbon (C): 0.7% or more and less than 1.6%,

silicon (Si): 0.5 to 3.0%,

manganese (Mn): 0.1 to 3.0%,

phosphor (P): less than 0.05% including 0%,

sulfur (S): 0.01 to 0.12%,

chromium (Cr): 7.0 to 13.0%,

one or two elements selected from the group consisting of molybdenum (Mo) and tungsten (W): amounts satisfying the formula: $(Mo + (W/2)) = 0.5$ to 1.7%,

vanadium (V): less than 0.7% including 0%,

nickel (Ni): 0.3 to 1.5%,

copper (Cu): 0.1 to 1.0%,~~and~~

aluminum (Al): 0.1 to 0.7%, and

the balance being iron and unavoidable impurities,

wherein amounts of nickel and aluminum satisfy the formula: $Ni/Al = 1$ to 3.7.

Claim 2 (canceled).

3. (original): The cold die steel according to claim 1, wherein amounts of chromium and carbon satisfy the formulas by mass%: $(Cr - 4.2 \times C) = 5$ or less, and $(Cr - 6.3 \times C) = 1.4$ or more.

4. (original): The cold die steel according to claim 1, wherein the steel further includes, by mass%, 0.3% or less excluding 0% of columbium (Nb).

5. (currently amended): A cold die steel excellent in characteristics of suppressing dimensional change including, consisting essentially of, by mass%,

carbon (C): 0.7% or more and less than 1.6%,

silicon (Si): 0.5 to 3.0%,

manganese (Mn): 0.1 to 3.0%,

phosphor (P): less than 0.05% including 0%,

sulfur (S): 0.01 to 0.12%,

chromium (Cr): 7.0 to 13.0%,

one or two elements selected from the group consisting of molybdenum (Mo) and tungsten (W): amounts satisfying the formula: $(Mo + (W/2)) = 0.5$ to 1.7%,

vanadium (V): less than 0.7% including 0%,

nickel (Ni): 0.3 to 1.5%,

copper (Cu): 0.1 to 1.0%,

aluminum (Al): 0.1 to 0.7%, ~~and~~

columbium (Nb): 0.3% or less excluding 0%, and

the balance being iron and unavoidable impurities.

wherein amounts of nickel and aluminum satisfy the formula: $\text{Ni}/\text{Al} = 1$ to 3.7 ,
and
wherein amounts of chromium and carbon satisfy the formulas: $(\text{Cr} - 4.2 \times \text{C}) = 5$
or less, and $(\text{Cr} - 6.3 \times \text{C}) = 1.4$ or more, and
wherein the steel includes solid-solute carbon of about 0.53%,
whereby nickel and aluminum forms an intermetallic compound through
quenching and tempering.

Claims 6-8 (canceled).

9. (new): A method for suppressing dimensional change of a cold die steel, comprising
preparing an ingot of the steel, the steel consisting essentially of, by mass%,
carbon (C): 0.7% or more and less than 1.6%,
silicon (Si): 0.5 to 3.0%,
manganese (Mn): 0.1 to 3.0%,
phosphor (P): less than 0.05% including 0%,
sulfur (S): 0.01 to 0.12%,
chromium (Cr): 7.0 to 13.0%,
one or two elements selected from the group consisting of molybdenum (Mo) and
tungsten (W): amounts satisfying the formula: $(\text{Mo} + (\text{W}/2)) = 0.5$ to 1.7% ,
vanadium (V): less than 0.7% including 0%,
nickel (Ni) : 0.3 to 1.5%,
copper (Cu) : 0.1 to 1.0%,

aluminum (Al): 0.1 to 0.7%, and
the balance being iron and unavoidable impurities,
wherein amounts of nickel and aluminum satisfy the formula by mass%:
 $Ni/Al = 1 \text{ to } 3.7$;
hot working the ingot,
annealing the worked steel,
quenching the annealed steel,
tempering the quenched steel so that nickel and aluminum form an intermetallic
compound.

10. (new): The method according to claim 9, wherein the amounts of chromium and carbon satisfy the formulas by mass%: $(Cr - 4.2 \times C) = 5$ or less, and $(Cr - 6.3 \times C) = 1.4$ or more, and

wherein the quenching is performed from about 1030°C whereby an amount of solid-solute carbon becomes about 0.53%.

11. (new): The method according to claim 9, wherein the tempering comprises heating the steel at about 510°C.

12. (new): The method according to claim 9, wherein the steel further includes, by mass%, 0.3% or less excluding 0% of columbium (Nb).